

# Recreational Trail Access Guidelines and Applications



# **Trail Guidelines, Recommendations and Status**

## **Session Objectives:**

- **Identify Who are Our Users**
- **Identify a Brief History of Trail Accessibility and Rule Making**
- **Identify When and Where These Rules (Guidelines) Apply**
- **Identify What is Routine Maintenance and What can be Done to Improve Accessibility**

# **Trail Guidelines,**

## **Recommendations and Status**

### **Session Objectives:**

- **Review Proposed Critical Components of “Report on Outdoor Developed Areas - Trails”**
- **Review Proposed Guidelines Points of Departure and Exceptions**
- **Review Critical Components of USDA Forest Service Trail Accessibility Guidelines**



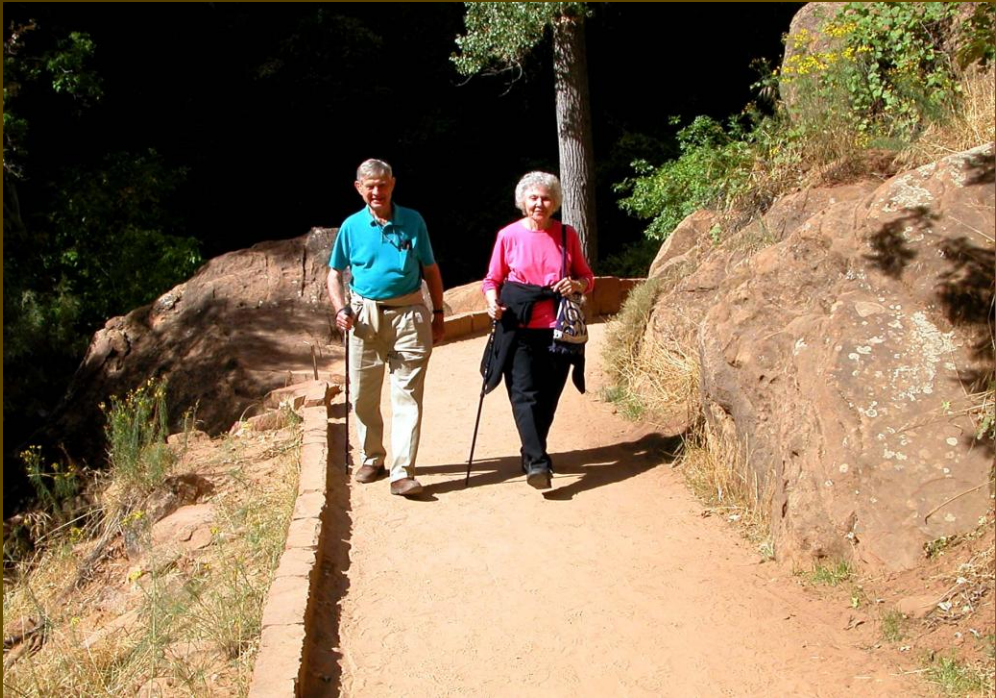
# Who are we Designing and Constructing These Trails for ?

















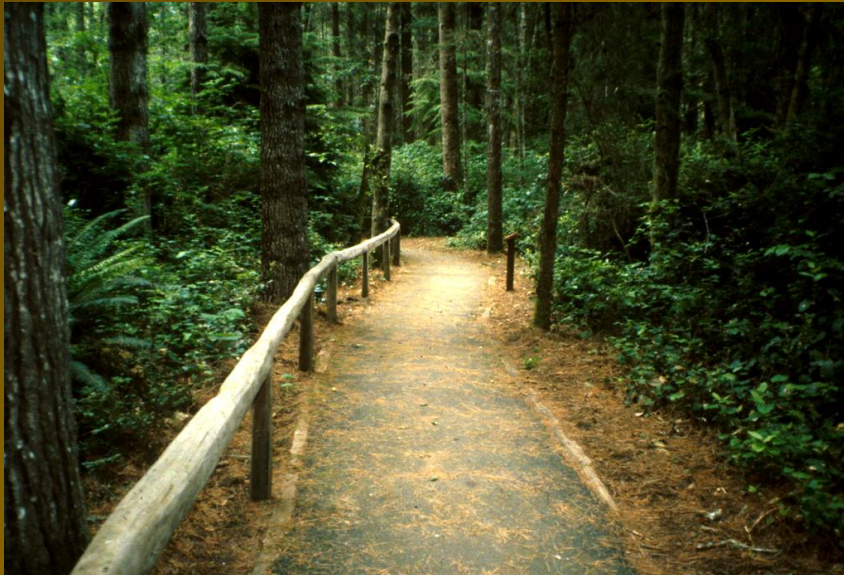
# Base line Statistics For Potential Hikers With Disabilities

- There are over 30 million people with a disability in the US
- There are over 35 million people over the age of 65 in the US
- 45% of those people have a disability
- 31% of the people in the US (93 million) are obese
- There are 16 million children under 4 years old



# History Of Accessible Trails

# The Architectural Barriers Act Passed in 1968 (Built Environment)





# Americans with Disabilities Act of 1990

## After two Unsuccessful Attempts the Regulatory Negotiating Committee on Accessibility Guidelines for Outdoor Developed Areas was Formed “REGNEG”

- In 1999 this committee produced its proposed guidelines
- The US Access Board prepared a notice of rule making (social and economic impacts)
- Report was subjected to public review & comment under the Architectural Barriers Act “Federal Agencies Only” (October 2007)
- After review of the comments a final rule will be sent to the Office of Budget and Management for their approval

- Once approved it will be published in the Federal Register
- The rule will be sent to the General Services Administration and the Department of Defense for their adoption
- Once the ABA rule making process is completed the Access Board will submit the proposed rule for public comment under the American Disabilities Act (ADA)
- The same process is followed except that once it is approved by the Office of Budgets and Management it is sent to the Department of Justice to become Federal Law
- State and Local Governments then adopt the federal standards or develop their own as long as they are equal to or greater than the federal standards



# The REGNEG Committee Operated Under the Following Guidelines

- Protect resource and environment
- Preserve experience
- Provide for equality of opportunity
- Maximize accessibility
- Be reasonable
- Address safety
- Be clear, simple and understandable

# The REGNEG Committee Operated Under the Following Guidelines

- Provide guidance
- Be enforceable and measurable
- Be consistent with the Americans With Disabilities Act (as much as possible)
- Be based on independent use by persons with disabilities



Until the REGNEG  
Guidelines  
Become Law They  
Represent the  
“Best Available  
Information” on  
Accessible Trail  
Design. USFS has  
Developed their  
own Guidelines  
“Policy”



# **Outdoor Access Guidelines and Trails**

- **How Do These Guidelines Apply?**
- **As a Park Manager What Do We Need to Know and Do?**



**These guidelines apply only to pedestrian & multiuse trails. Trails designated specifically for either equestrian, mountain bike or off highway vehicle use are exempt from the guidelines.**



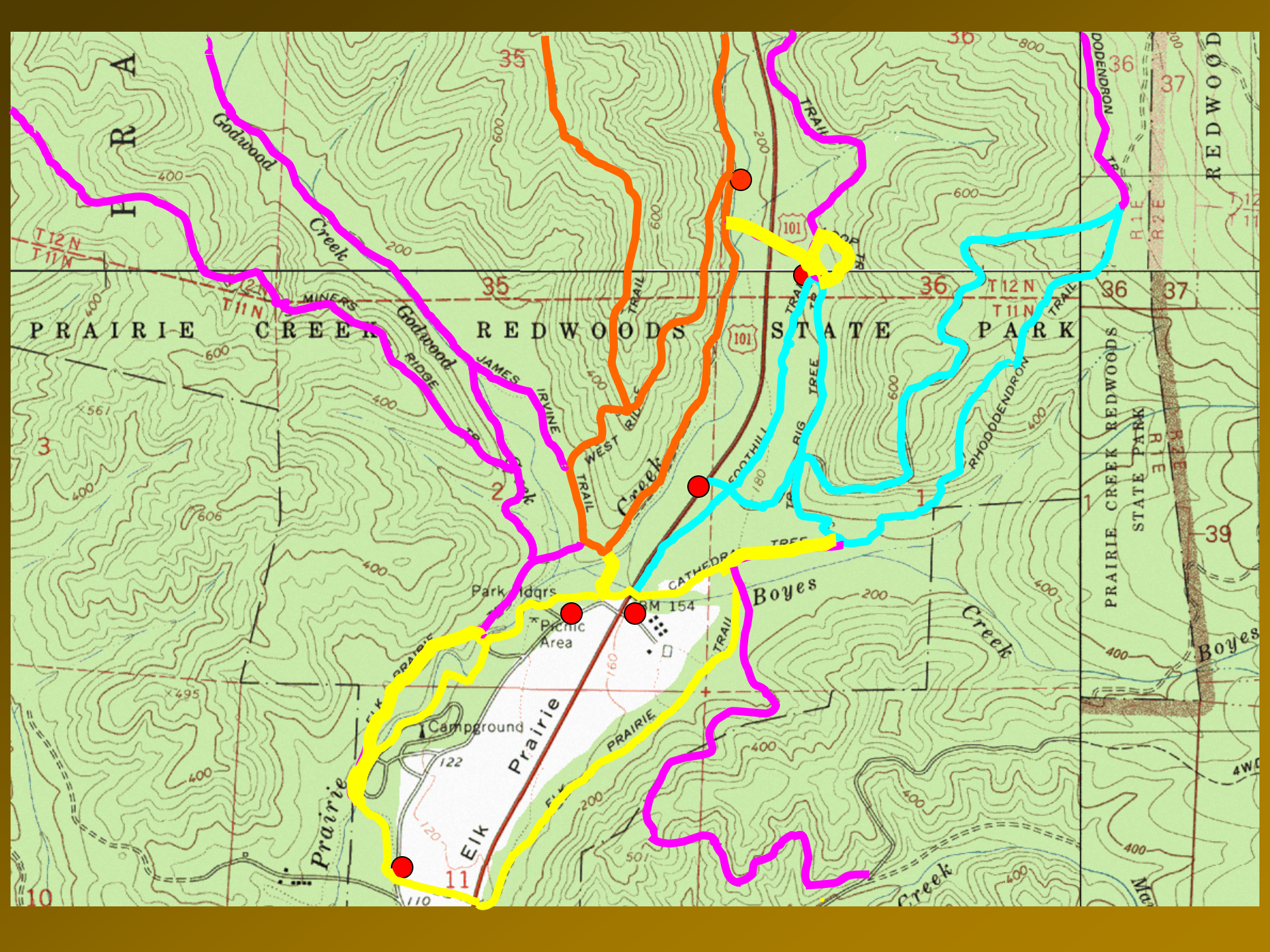
**These guidelines only apply to pedestrian & multiuse trails that are connected to a trailhead or an accessible trail. Trails not connected to either of these facilities are exempt from the guidelines.**



# The REGNEG Guidelines Apply to New Trail Construction and Trail Alterations









# **Maintenance**

- **Guidance is Provided on Maintenance Activities**
- **Maintenance would be exempt when:**
- **Work is Performed to Return a Trail Segment Back to the Original Design Standard**

# Brushing, Trail Clearing, Down Trees and Rock fall Removal





# Repair of Tread Surfaces, Replacing Trail Features, i.e. Retaining Walls, Steps etc.





# Erosion Control and Drainage Structure Installation, i.e. rip rap, reroutes around bogs and marshes





# Repairs of Bridges and Turnpikes

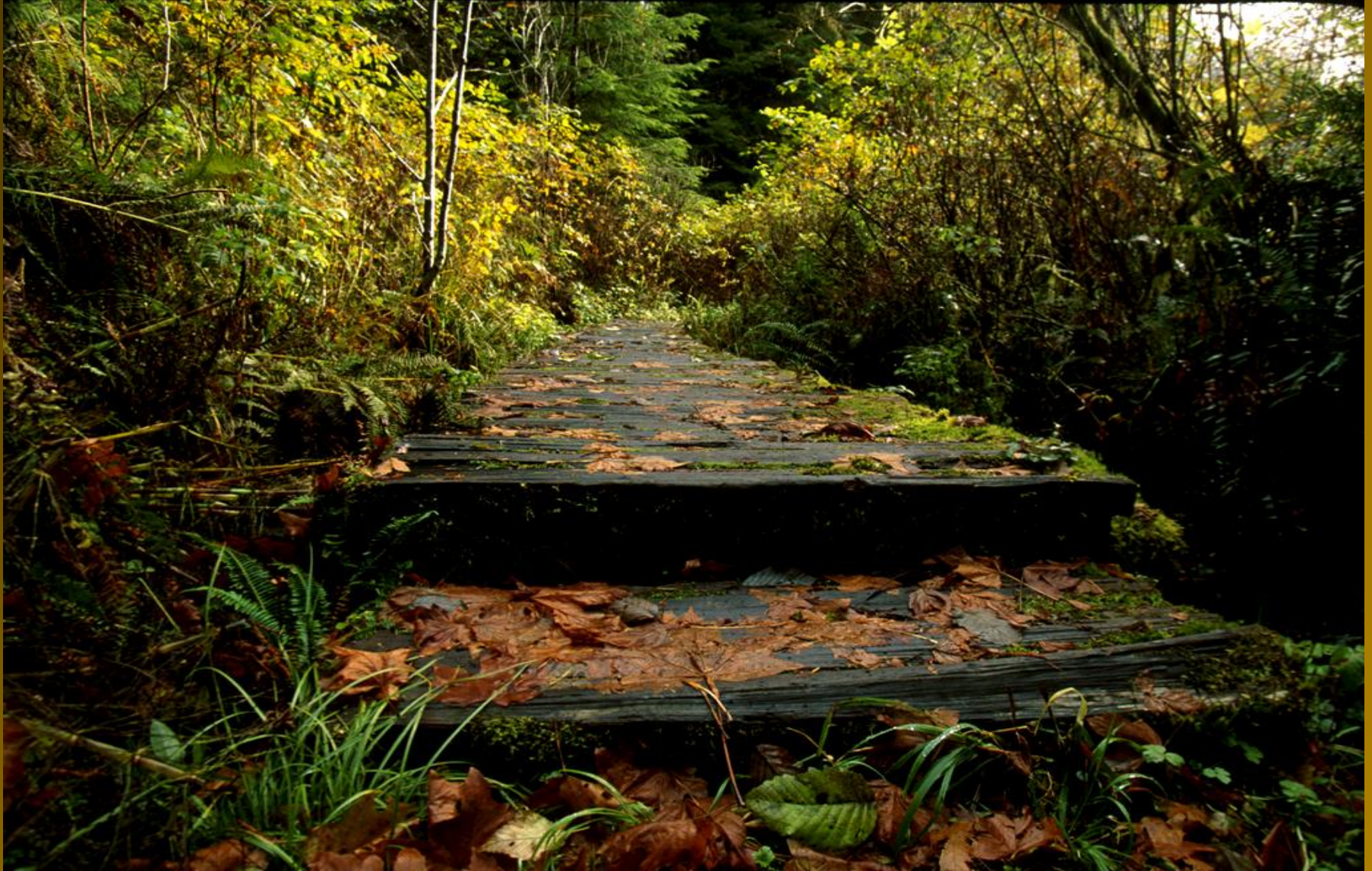


# **Maintenance**

- **There is Access Improvement Opportunity During Maintenance Procedures**
- **Every Time a Trail Receives Maintenance, We Can Improve Access**



# Drop Off Along Edge of Bridge, Plus Steps Creates Hazard and Barrier to Users





# Solution : Install Elevated Curbing on Bridge Structures and Grade Trail to Deck





# Tread Surface Soft and Unstable



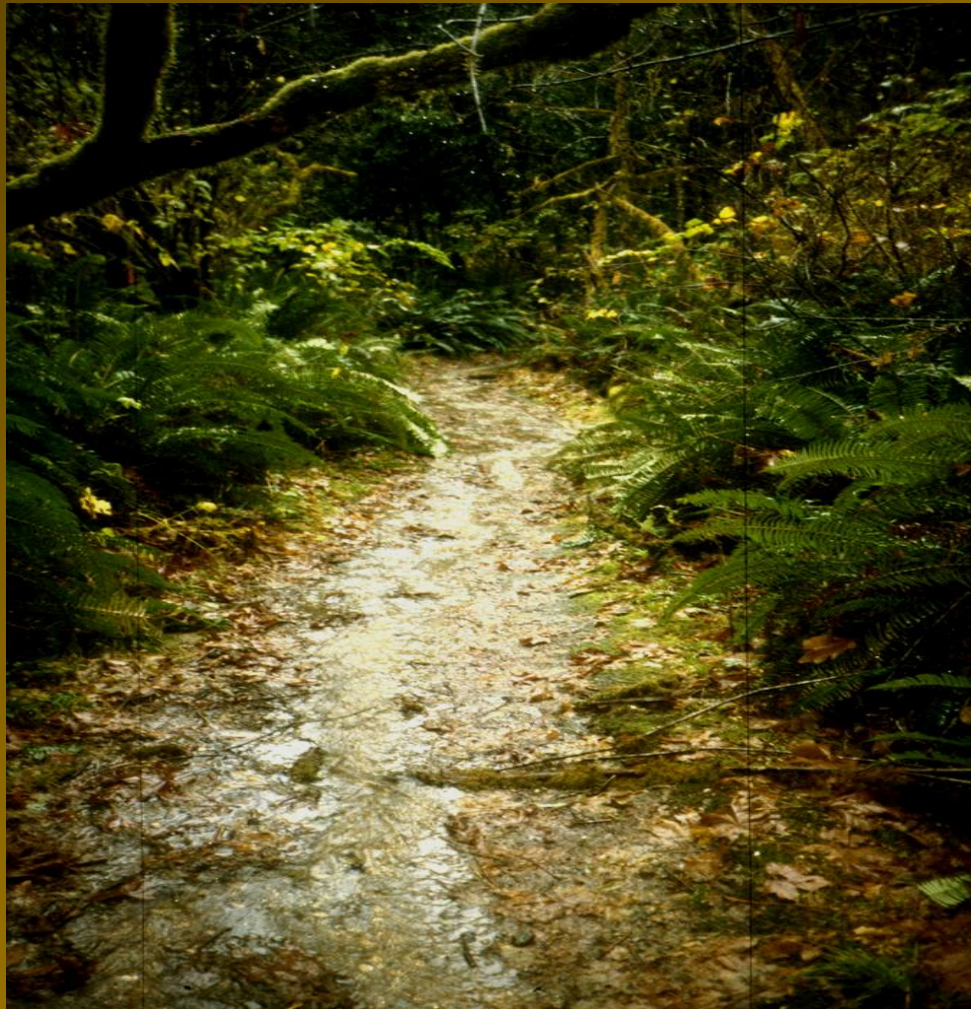


Solution: Build Up with Gravel and Soils  
(Turnpike) to Stabilize





# Trail Routes Along Stream Terraces that Periodically Flood and Have Saturated Unstable Tread





# Solution: Reroute Trail Away From Stream Terrace and Turnpike to Stabilize Trail Tread





# Reroute of Poor Trail Alignments





# Reroute of Poor Trail Alignments





# **Technical Provisions (Guidelines)**

**Clear  
Tread  
Width**

**36"  
Minimum**



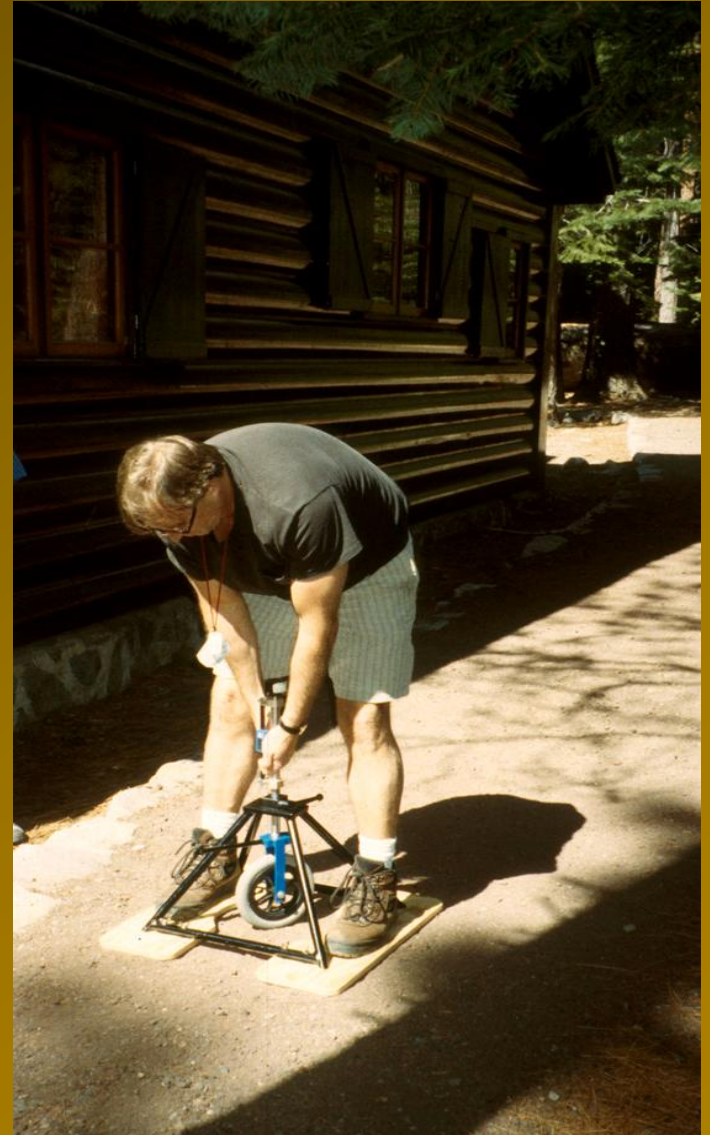




If tread width is less than 60", passing space every 1000' is required 5'x5' min. 5% max. grade & cross slope



The Trail Tread Must be Firm And Stable  
Standards for Firmness and Stability and  
Instruments to Measure Tread Surfaces have  
been Developed





# Grade or Running Slope

Shall be:

- 5% (1:20) or less for any distance
- 8.3% (1:12) max up to 200 ft
- 10% (1:10) max up to 30 ft
- 12% (1:8) max up to 10 ft





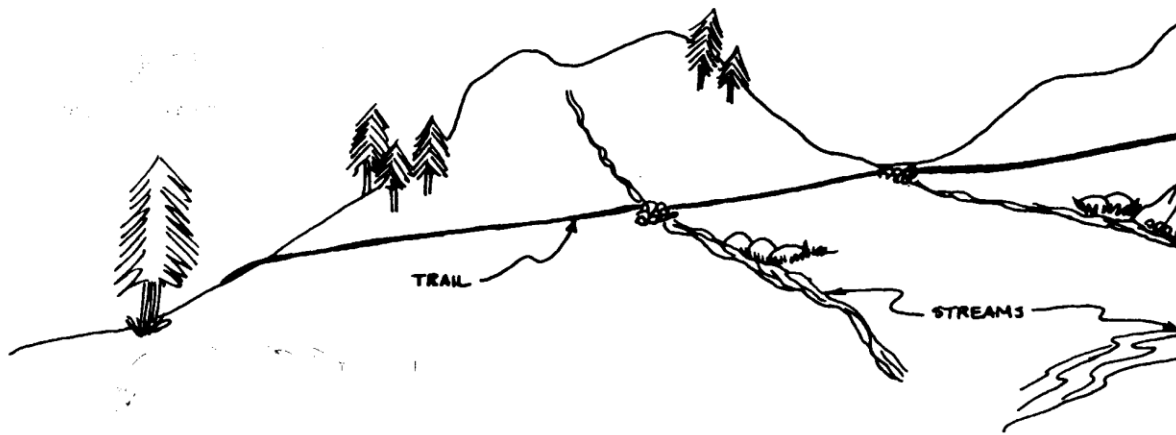
# Rest Areas are Required at The Beginning and End of Each Trail Segment in Excess of 5%

Rest area 5' length  
min. with max. 5%  
grade & cross slope.  
Width is as wide as  
widest portion of trail  
segment

8.33 % for  
max. 200'







**Trail's Total  
Length 70% or  
more must  
have a Grade  
or Running  
Slope of Less  
Than 8.3%**

TOPOGRAPHIC PROFILE OF TRAIL LAYOUT

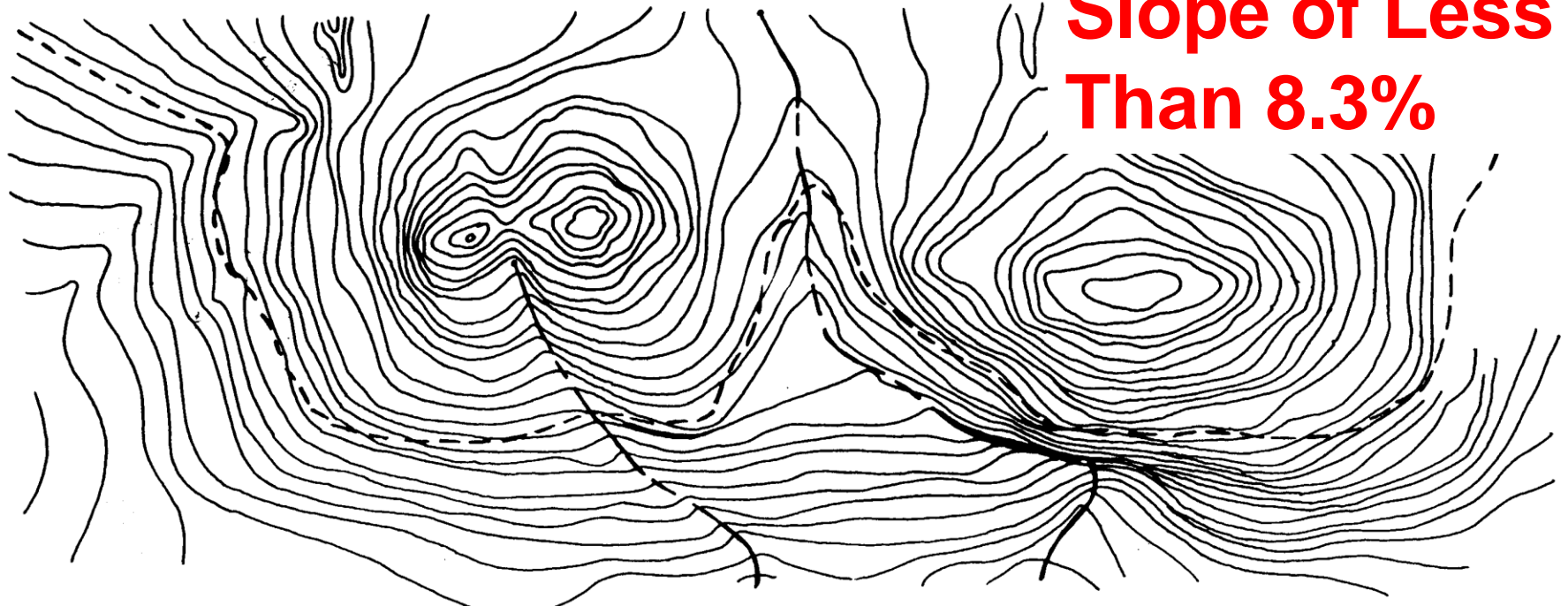


Figure 10.3

**Grade or Running Slope**



# Slopes

Cross Slope “A”

Linear Grade “B”

Are Key  
Elements of  
Accessibility





# Cross Slopes

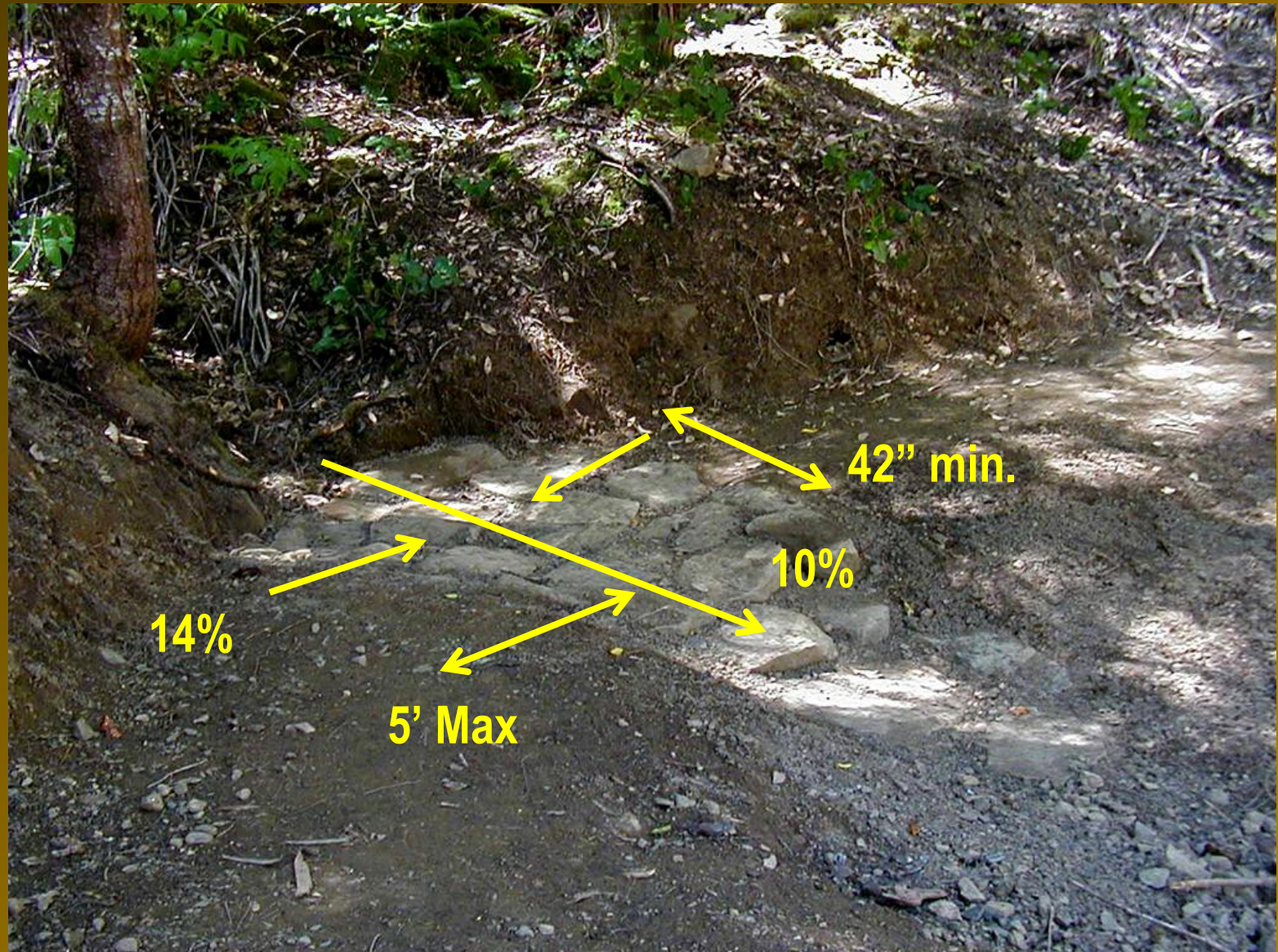
5%

Maximum

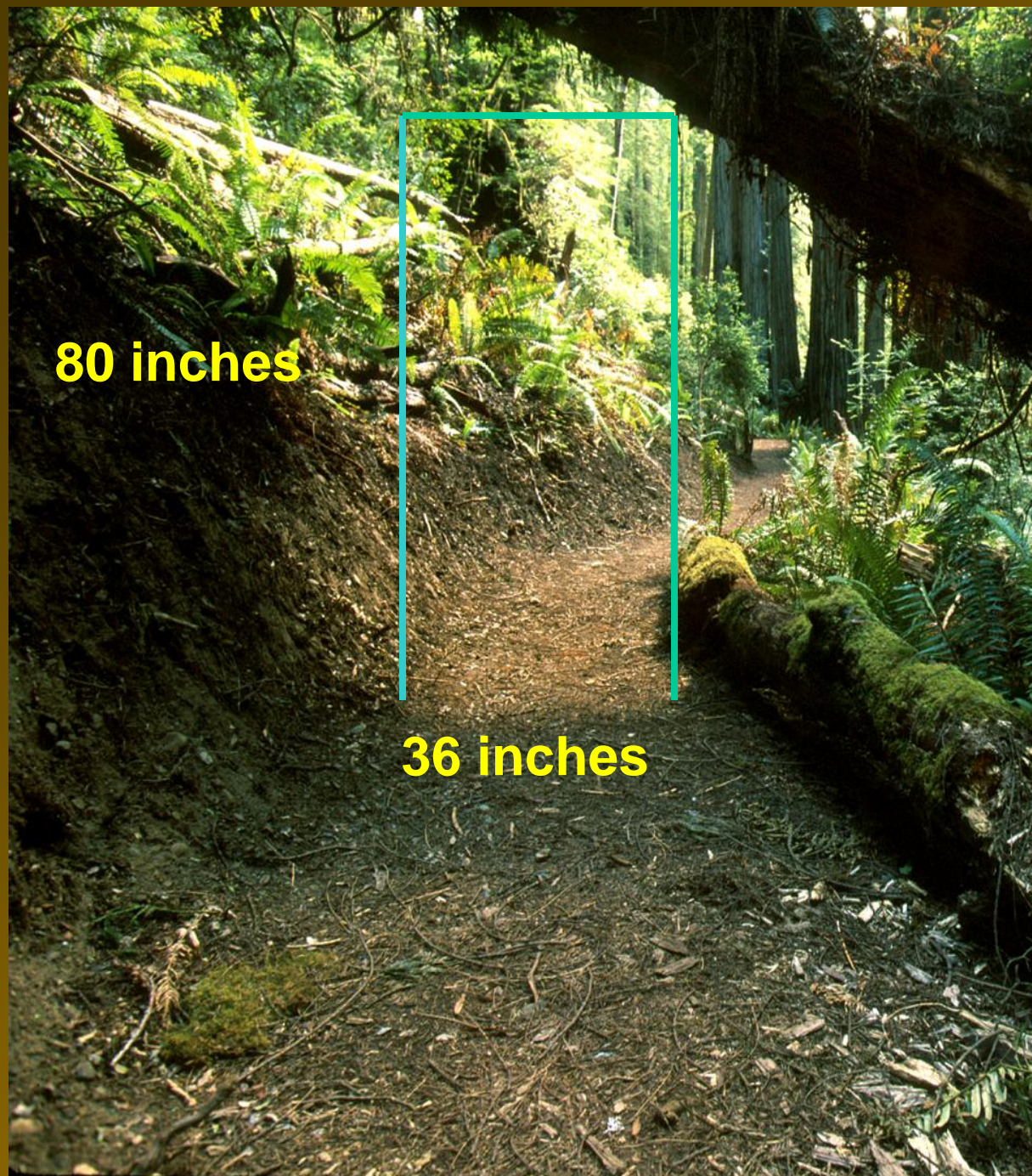




# 14% Linear Grades and 10% Cross Slopes are Allowed at Drainage Crossings







The Area  
Over the  
Trail Tread  
Must be  
Clear of  
Protruding  
Objects to a  
Height of  
80"



# Tread Obstacles

**Standard  
2" Max  
Height**







**Tread obstacles**

**Exceptions:**

**3" max height  
up to a  
maximum slope  
in any direction  
of 5%**



The Trail Tread Has a Maximum Opening of  $\frac{1}{4}$ " When They are Parallel to the Direction of Travel



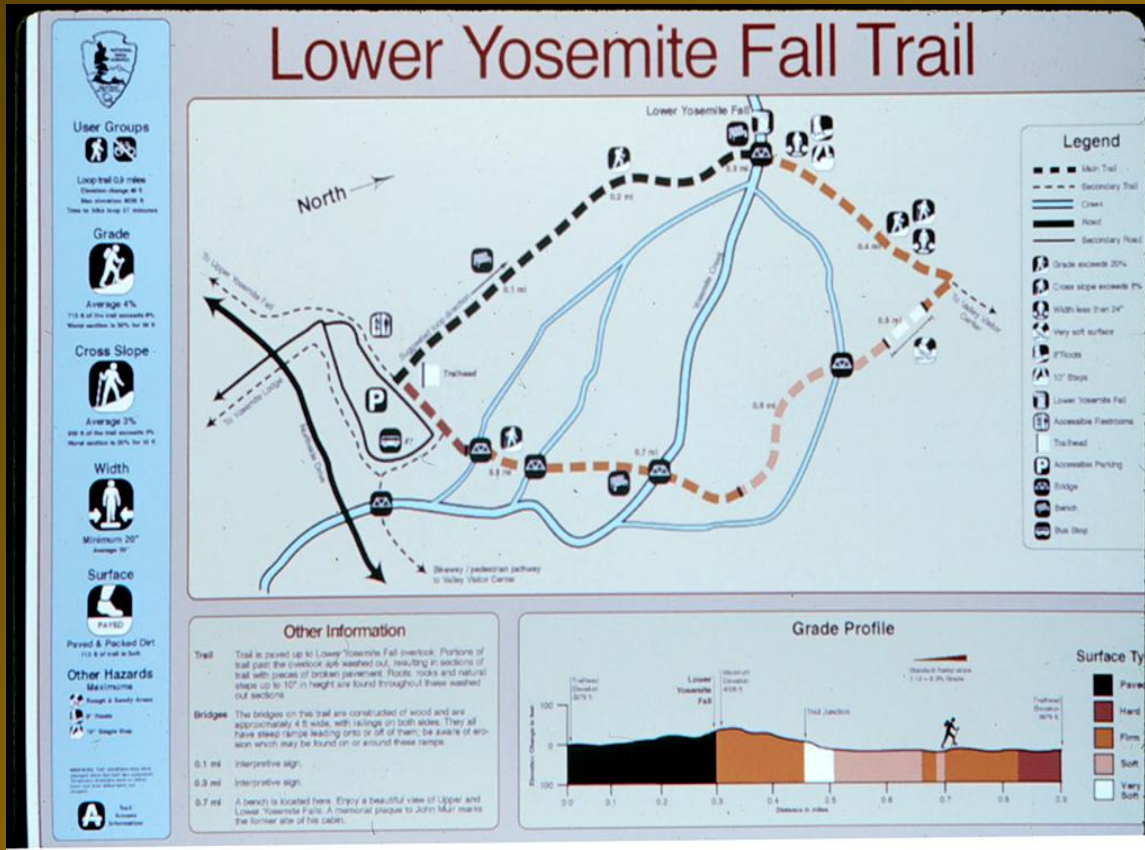




**$\frac{1}{2}$ " Max. When  
Openings are  
Perpendicular  
to Travel**



# Provide Trail Signage Information: Total Distance of the Accessible Segment and Location of the First Point of Departure From the Accessible Provisions. Accessible Trails Must Also be Signed with the Appropriate Logo



- Trail Uses**
- Hiking
  - No bikes
  - No Equestrians
- Other Obstructions**
- Rocks 5-14 inches
  - Vertical 48 inches
  - Roots 4-9 inches

## Turkey Hollow Turkey Run State Park

### Trail Length 0.6 miles (1.0 km)

Turkey Hollow Trail descends down the hill from the Turkey Run Inn and Cabins. The trail meanders through an old, hardwood forest of maple, oak, and hickory trees. Several stream crossings are encountered and water levels varying depending on seasonal rains.

**Cumulative Elevation Change** Gain 60 ft (18 m)  
Loss 17 ft (5 m)

**Typical Grade is 2.4%**  
2% of the trail is between 8% and 16%  
24 ft (7 m) is between 14% and 16%  
8% grade is a standard ramp.

**Typical Cross Slope is 2.2%**  
16% of the trail is between 3% and 12%  
28 ft (9 m) is between 8% and 12%

**Minimum Tread Width is 36 in (91 cm)**  
**Maximum Tread Width is 72 in (183 cm)**  
**Minimum Clearance is 26 in (66 cm)**

**Trail surface is Soil**  
44% of the trail is Hard  
1778 ft (542 m) of the trail is Firm

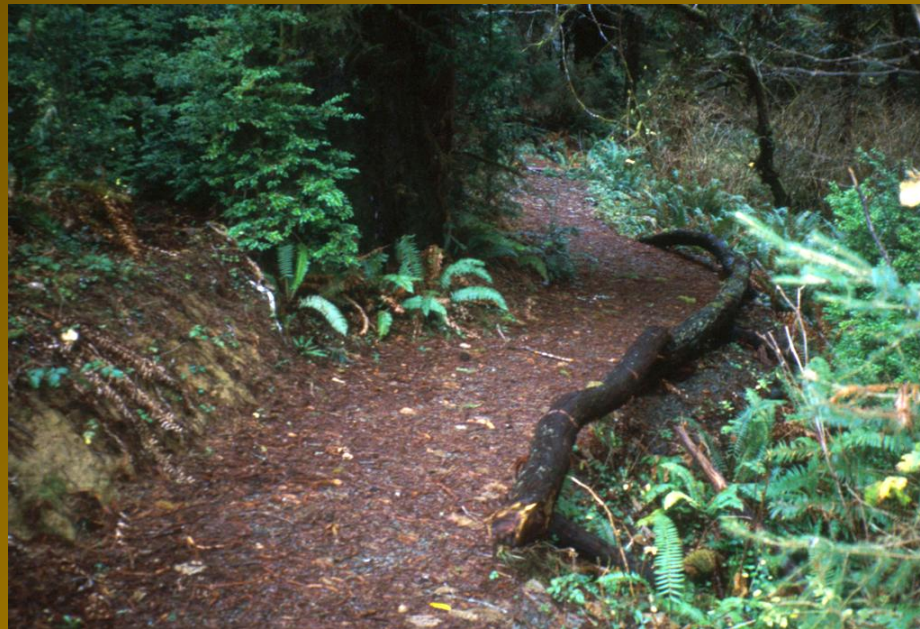
**Trailhead Location**  
Behind Cabins



**Warning:** Trail conditions may have changed since this trail was assessed. Temporary obstructions (e.g. fallen trees or land slides) were not mapped. Maximum grades and cross slopes may vary by 10% of the actual value measured (e.g. a maximum grade of 30% may actually be 3% more or less than the reported value).



# Edge Protection is Provided Where Needed





# Conditions for Departure

- **There are Four Conditions That When Present Can Act as Exemptions to the Technical Provisions (Guidelines)**
- **If Any of the Four Conditions for Departure Constitute over 15% of the Trails Length, Then the Trail Does Not have to Comply with the Technical Provisions (Guidelines) *After* the First Point of Departure.**



# Conditions for Departure

- **If the Segment Between the First Point of Departure and the Trailhead is less Than 500 Feet, Then the Technical Provisions do not Apply**
- **However, If There is a Prominent Feature Less Than 500 Feet From the Trailhead, the Trail Segment Between the Feature and the Trailhead Shall Comply With the Technical Provisions**



# **Conditions for Departure**

## **1. Where Compliance Could Cause Substantial Harm**

- To Cultural, Historic, Religious, or Significant Natural Features or Characteristics**



**Where  
Compliance  
Could Cause  
Harm to a  
Natural or  
Cultural  
Feature  
Such as a  
Historic Steps**



# **Conditions for Departure**

- 2. Where Compliance Would Alter the Nature of Setting or Purpose of the Facility or Setting**



Alter the  
*Nature* of  
*Setting* or  
*Purpose* of the  
Facility or  
Setting





# Alter the *Nature* of *Setting* or *Purpose* of the Facility or Setting





# Conditions for Departure

3. **Where Compliance Would Require Construction Methods or Materials Prohibited by Regulation or Statute**

# Construction Methods or Materials Prohibited by Regulation or Statute



## Tool & Material Restrictions (Wilderness)





# Construction Methods or Materials Prohibited by Regulation or Statute



# **Conditions for Departure**

- 4. Where Compliance Would Not be Feasible Due to Terrain or Prevailing Construction Practices**



**Compliance Not  
Feasible due to terrain  
Steep Topography and  
No Reroute Options**





# Available Labor Force Lacks Requisite Skills, Knowledge or Equipment





# Exceptions to Technical Provisions

- In addition to the Conditions for Departures, REGNEG Recognized that Where Certain Physical Conditions Existed it Would be Impractical to Require That the Accessibility Guidelines be Met
- There are Four Exceptions That When Present Can Act as Exemptions to the Technical Provisions (Guidelines)
- When a Combination of One or More of the Conditions for Departure Exist and One or More of the Exemptions Exist, the Guidelines will not Apply Beyond the First Point of Departure

# Exceptions to Technical Provisions

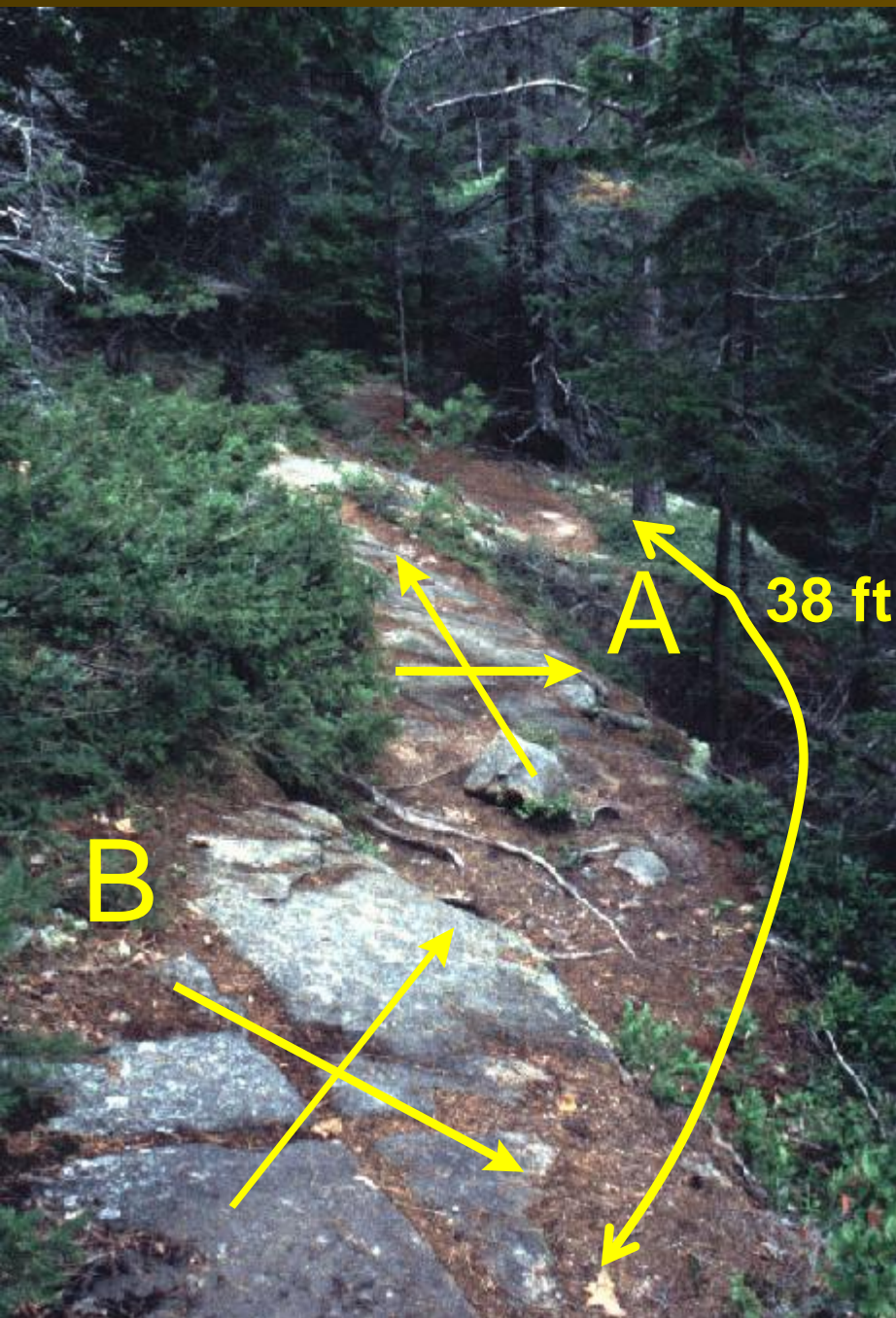
- **If the Segment Between the First Point of Departure and the Trailhead is less Than 500 Feet Then the Technical Provisions do not Apply**
- **However, If There is a Prominent Feature Less Than 500 Feet From the Trailhead, the Trail Segment Between the Feature and the Trailhead Shall Comply With the Technical Provisions**



# **Exceptions to the Technical Provisions (Guidelines)**

## **Conditions:**

- 1. Cross Slope and Grade Combined, Exceed a Total of 40% for More than 20'**



### **Section A**

**Cross Slope – 18%**

**Running Slope – 23%**

### **Section B**

**Cross Slope - 23%**

**Running Slope - 21%**

### **Combined slopes**

**Section A-41%**

**Section B-44%**

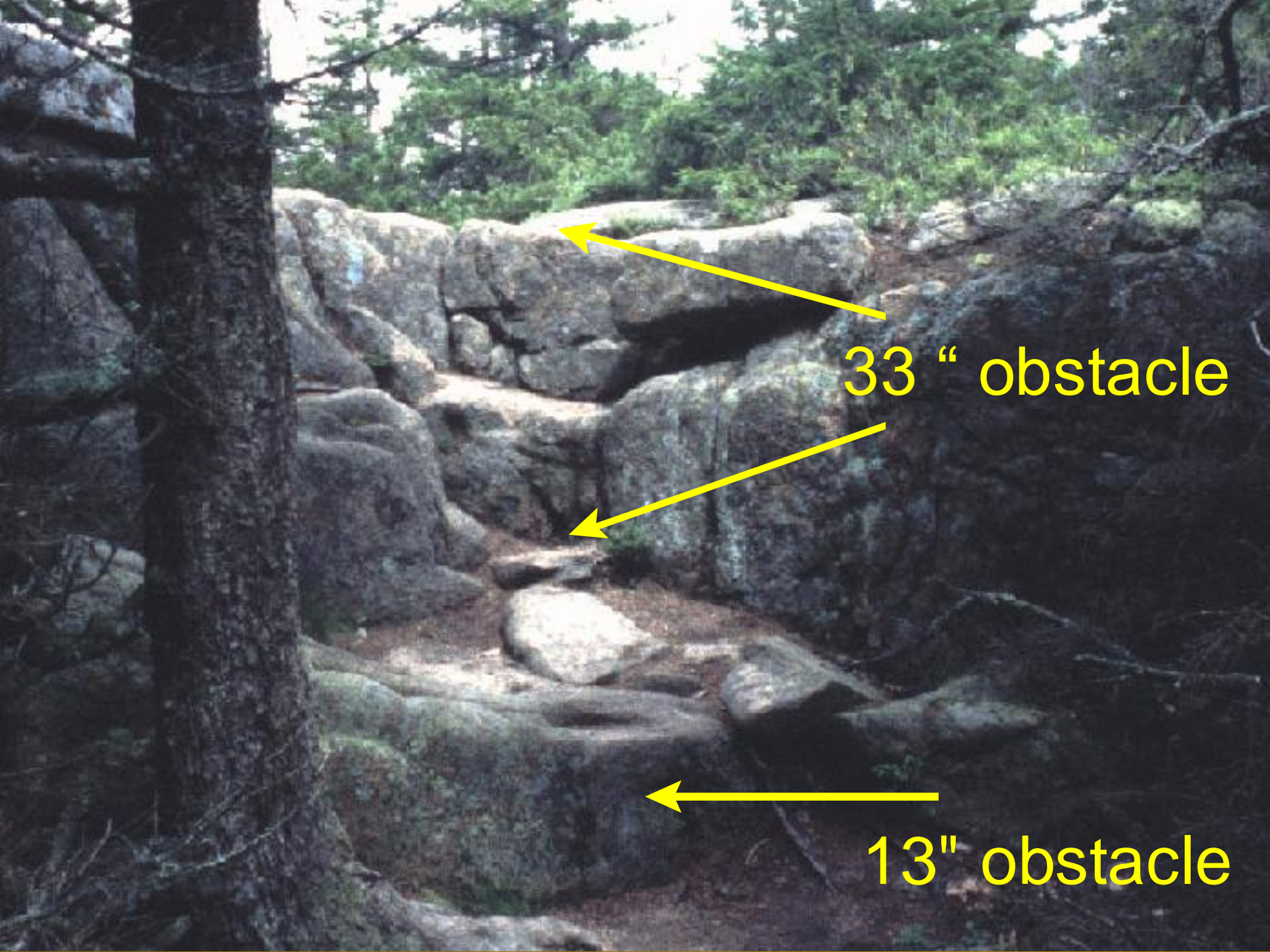
**Tread length: 38 ft**



# **Exceptions to the Technical Provisions (Guidelines)**

**Conditions:**

- 2. Tread Obstacle 30” High or More Across Full Tread Way**



33 " obstacle

13" obstacle



# **Exceptions to the Technical Provisions (Guidelines)**

## **Conditions:**

- 3. Tread Surface Not Firm and Stable for 45' or More**





# **Exceptions to the Technical Provisions (Guidelines)**

## **Conditions:**

- 4. Tread Width is Less Than 12” for 20 Feet or More**





# Conditions for Departure and Exceptions Review

Trailhead

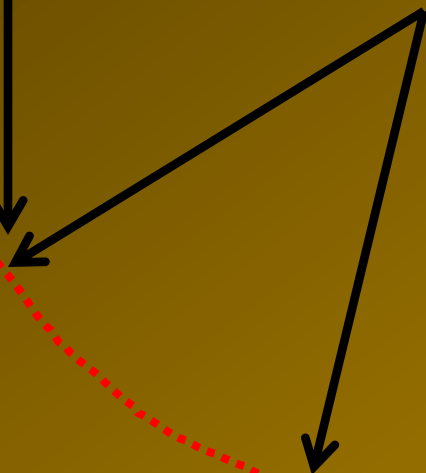
# Fern Falls Trail

Trail Distance 10,000 Feet



1,500'  
distance

Steep terrain 1,000  
feet in length  
requiring steps



Fern Falls





**If Any of the Four Conditions for  
Departure Constitute less than 15% of  
the Trails Length, Then the Trail Does  
have to Comply with the Technical  
Provisions (Guidelines) *Before* and  
*After* the Area of Departure.**

Trailhead

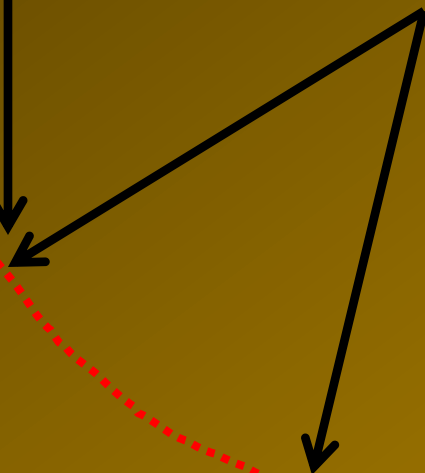
# Fern Falls Trail

Trail Distance 10,000 Feet



1,500'  
distance

Steep terrain 2,000  
feet in length  
requiring steps



Fern Falls





**If Any of the Four Conditions for  
Departure Constitute over 15% of the  
Trails Length, Then the Trail Does Not  
have to Comply with the Technical  
Provisions (Guidelines) *After* the First  
Point of Departure.**

Trailhead

# Fern Falls Trail

Trail Distance 10,000 Feet



2,500'  
distance

Steep terrain 1,000  
feet in length  
requiring steps

Unstable  
surface for  
100 feet

Fern Falls





**When a Combination of One or More of the Conditions for Departure Exist and One or More of the Exemptions Exist, the Guidelines will not Apply Beyond the First Point of Departure**

Trailhead

# Fern Falls Trail

Trail Distance 10,000 Feet



420'

distance



Steep terrain 2,000  
feet in length  
requiring steps



Fern Falls





**If the Segment Between the First  
Point of Departure and the  
Trailhead is less Than 500 Feet,  
Then the Technical Provisions do  
not Apply**

# Trail Distance 10,000 Feet

A red octagon with a black border, centered in the top row of the diagram.



**If There is a Prominent Feature  
Less Than 500 Feet From the  
Trailhead, the Trail Segment  
Between the Feature and the  
Trailhead Shall Comply With the  
Technical Provisions**

Compliance with Accessibility Requirements is Determined by Reconnaissance and Planning Efforts. Documented in NEPA/Environmental Process.





# Key Differences In USDA Forest Service Trail Accessibility Guidelines

- Identifies a change in trail class as an additional condition for departure under “Alter the nature or purpose of the setting”
- Exception: Combination of trail grade and cross slope exceeds 20% for over 40 feet (40% x 20')
- Exception: Minimum trail width is 18 inches or less for a distance of at least 20 feet (12"x 20')
- Written documentation is required when a determination is made that the technical provisions do not apply

# Key Differences In USDA Forest Service Trail Accessibility Guidelines

- Passing space design shall comply with the Architectural Barriers Act (T shaped)
- Where vertical clearance is reduced to less than 80 inches due to one or more of the conditions for departure a barrier shall be provided to warn hikers with visual impairments
- Identifies placement and content of trail signs



# **Trail Guidelines, Recommendations and Status**

## **Session Objectives Review:**

- **Identified who our users are**
- **Reviewed how accessible trails got to this point**
- **Reviewed when and where accessible guidelines apply**
- **Enhance Accessible Characteristics While Maintaining Trails**

# **Trail Guidelines, Recommendations and Status**

## **Session Objectives Review:**

- Reviewed the proposed REGNEG guidelines**
- Reviewed the four conditions for departure**
- Reviewed the four exceptions to the guidelines**



# **Trail Guidelines, Recommendations and Status**

## **Conclusion:**

- **It is a Mind Set Change**
- **Design Accessible Components  
Without Resource Damage**
- **Provide Quality Outdoor Experience  
For All Users**



eagle nest

7th Trail

**NCTC Accessible  
Trail Field  
Exercise**





eagle nest

7th Trail

**NCTC Accessible  
Trail Field  
Exercise**